

Claims

1. Targeted fused chimeric toxins produced by genetic engineering techniques, comprising of cell targeting moieties and cell killing moieties for recognizing and for destroying specific cells bearing gonadotropin releasing hormone binding sites, wherein the cell targeting moieties consist of gonadotropin releasing hormone and the cell killing moieties consist of a cell killing Toxin.

2. Targeted fused chimeric toxins according to claim 1 wherein the specific cells bearing gonadotropin releasing hormone binding sites are selected from malignant adenocarcinoma cells, benign uterine, lyomyoma cells, endometrial island cells and pituitary tumor adenoma cells.

3. Targeted fused chimeric toxins according to claim 1 wherein the cell targeting moiety is an oligonucleotide encoding ten amino acids of a gonadotropin releasing hormone analog fused at the cDNA level to the killing moiety that consists of a mutated form of the full length Pseudomonas Exotoxin, encoding the protein GnRH-PE66.

4. Targeted fused chimeric toxins according to claim 1 wherein the cell targeting moiety is an oligonucleotide encoding ten amino acids of a gonadotropin releasing hormone analog fused at the cDNA level to the killing moiety that consists of domains II and III of the Pseudomonas Exotoxin, encoding the protein GnRH-PE40.

5. A method for the production of targeted fused chimeric toxin GnRH-PE66 as defined in claim 1 and comprising fusing an oligonucleotide encoding ten amino acids of a gonadotropin releasing hormone analog upstream to a mutated form of PE.

6. A method for the production of cancer cell targeted chimeric toxin GnRH-PE40 as defined in claim 1 and 4 comprising ligating an oligonucleotide encoding ten amino acids of a gonadotropin releasing hormone analog upstream to ~~domains II and III of the PE.~~

### A pharmaceutical

7. ~~Pharmaceutical~~ composition useful for treatment in cancer therapy comprising as active ingredients chimeric toxins as defined in claims 1-4.

8. Chimeric toxins as defined in claims 1-4 and pharmaceutical compositions as defined in claim 7 containing the same as defined in claim 7 for use in the treatment of malignant carcinomas and benign tumors.

9. A method for cancer therapy in mammals by administering to the patient's body chimeric toxins or their pharmaceutical compositions as defined in claims 1-4 and 7.

10. A method for cancer therapy according to claim 9 wherein the chimeric toxins are administered by systemic administration or by trans cervical washing of the endometrial cavity.

11. A method for treating endometriosis by administering chimeric toxins or their pharmaceutical compositions as defined in <sup>claim 1</sup> ~~claims 1-4 and 7~~ to the patient's body.

12. A method for treating endometriosis according to claim 11 wherein the chimeric toxins are administered by peritoneal washings or by ultrasonic guided or laparoscopic intra-endometrial injections or by systemic administration.

13. A method for treating uterine myomas by administering chimeric toxins or their pharmaceutical compositions as defined in claims 1-4 and 7 to the patient's body.

14. A method for treating uterine myomas according to claim 13 wherein the chimeric toxins are administered by trans cervical washing of the endometrial cavity.

A 15. A method for treating pituitary adenomas by administering chimeric toxins or their pharmaceutical compositions as defined in claims <sup>1</sup> ~~1 - 4 and 7~~ to the patient's body.

16. A method for treating pituitary adenomas according to claim 15 wherein the chimeric toxins are administered intra-~~thecally~~.

A 17. A method for treating BPH by administering chimeric toxins or their pharmaceutical compositions as defined in claims <sup>1</sup> ~~1 - 4 and 7~~ to the patient's body.

18. A method for treating BPH according to claim 17 wherein the chimeric toxins are administered systemically or by trans - uteral administration of GnRH-PE.

A 19. A method for treating polycystic breast disease by administering chimeric toxins or their pharmaceutical compositions as defined in claims <sup>1</sup> ~~1 - 4 and 7~~ to the patient's body.

20. A method for treating polycystic breast disease according to claim 19 wherein the chimeric toxins are systemically administered.

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